

U.S. Department of Energy
Office of Health, Safety and Security
Office of Corporate Safety Programs

Limited Scope Investigation Report



The June 11, 2007
Protective Force Fatality
at Savannah River Site

July 2007

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Disclaimer

This report is the product of a Limited Scope Investigation Team appointed by Glenn S. Podonsky, Chief Health, Safety, and Security Officer, Office of Health, Safety, and Security (HSS). The team was appointed to perform a Limited Scope Investigation (LSI) of the June 11, 2007 fatality at the Savannah River Site (SRS) and to prepare an investigation report in accordance with DOE Order 225.1A, Accident Investigations.

Because this was a LSI and not a Type A or B Accident Investigation, the team did not assume control of the investigative process, nor did it pre-empt the investigation being conducted by the SRS protective force contractor, Wackenhut Services, Incorporated (WSI). It is expected that the broader-scope WSI investigation will be completed in the latter part of July, 2007. This LSI was explicitly designed to examine the circumstances of the June 11, 2007 fatality as a means of generating insights into the design and implementation of Departmental programs. It specifically focused upon four areas of potentially general interest to the Department:

- Effectiveness of emergency response and first aid capabilities;
- Implementation of protective force physical fitness and medical requirements (as described in Title 10 Code of Federal Regulations (CFR) 1046, *Physical Protection of Security Interests*;
- Application of lessons learned from similar types of occurrences within the Department, as well as other military and police force-related incidents that may be identified; and
- Implementation of program and management systems interfaces within and between protective force and worker safety programs.

The results of this investigation will be expressed in a series of recommendations applicable to the foregoing four areas of inquiry.

The discussion of facts, as determined by the LSI team, and the views expressed in this report do not assume and are not intended to establish the existence of any duty at law on the part of the U.S. Government, its employees or agents, contractors, their employees or agents, or subcontractors at any tier, or any other party.

This report neither determines nor implies any legal liability.

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Appointing Official's Statement of Report Acceptance

On June 15, 2007, I assigned a Limited Scope Investigation team to examine issues of potential Departmental significance arising from the death of a protective force officer at the Savannah River Site, located near Aiken, South Carolina.

The team's responsibilities have been completed with respect to this inquiry. The inquiry was conducted in accordance with the provisions governing Limited Scope Investigations presented in DOE Order 225.1A, *Accident Investigations*.

I accept the recommendations of the team and authorize the release of the report for general distribution.

Glenn S. Podonsky
Chief, Health, Safety, and Security
Office of Health, Safety and Security

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ACRONYMS

ADA	Americans with Disabilities Act
AED	Automated External Defibrillator
CFR	Code of Federal Regulations
CPR	Cardiopulmonary Resuscitation
DCS	Defensive Combative Standard
DOE	United States Department of Energy
EKG	Electrocardiogram
EMT	Emergency Medical Technician
HSS	Office of Health, Safety and Security
IV	Intravenous
LSI	Limited Scope Investigation
ORPS	Occurrence Reporting and Processing System
OST	Office of Secure Transportation
S-1	Security Police Officer Fatality
SNM	Special Nuclear Material
SOMD	Site Occupational Medical Director
SPO	Security Police Officer
SPO-I	Security Police Officer (Defensive Combative Standard)
SPO-II	Security Police Officer (Offensive Combative Standard)
SPO-III	Security Police Officer (Offensive Combative Standard, Tactical Response)
SRS	Savannah River Site
WSI	Wackenhut Services, Incorporated
WSRC	Washington Savannah River Company

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EXECUTIVE SUMMARY

Introduction

On June 11, 2007, a fatality occurred at the Department of Energy's (DOE) Savannah River Site (SRS) involving a member of the Wackenhut Services, Incorporated (WSI) protective force. The protective force member had just completed an unsupervised physical fitness activity and was in the midst of "cooling down" prior to returning to duty when he suffered a heart attack (myocardial infarction) resulting in death. Although the circumstances were determined not to warrant appointment of a Type A Accident Investigation Board, the potential significance of the event with regard to the design and implementation of the Department's protective force physical fitness programs led the Chief, Health, Safety, and Security to initiate a Limited Scope Investigation (LSI) as defined in DOE Order 225.1A, *Accident Investigations*. The LSI team was tasked to examine the circumstances of the June 11 fatality as a means of generating insights into the design and implementation of Departmental programs and conclusions regarding potential improvements to both site practices and Departmental requirements. The results of this investigation are expressed in a series of recommendations derived directly from the circumstances of the event.

Circumstances of the Event

The Security Police Officer (SPO) (hereafter S-1) was engaged in an unsupervised on-shift physical fitness activity (treadmill interval training) in the fitness facility provided at the SRS 100-K Area. A second SPO (S-2) was using the facility at the same time. S-2 noted that, while S-1 appeared to be having some difficulty managing the interval settings of the treadmill, he demonstrated no signs of physical distress during the course of his exercise cycle. Upon completion of the cycle, including a cool-down phase on the machine, S-1 left the exercise room, took a bottle of water, and went to the nearby muster room to complete his

post-exercise cool down before returning to work. S-1 sat down in the muster room and conversed with three other SPOs (S-3, S-4, and S-5). In the midst of this conversation, S-1's head suddenly went back, and he dropped his bottle of water. S-3 immediately asked if he was "okay." S-1 responded "yes," but then immediately lost consciousness. He was placed on the floor, and two of the SPOs initiated cardiopulmonary resuscitation (CPR), while the third rushed to notify emergency medical response. A firefighter in the vicinity arrived shortly thereafter and assisted the SPOs with CPR prior to the arrival of the emergency medical team. The responding paramedics initiated advanced life support actions including the use of a cardiac monitor and defibrillator and the administration of a series of resuscitation medications. Life support/resuscitation activity continued as S-1 was transported by ambulance to the emergency room at University Hospital in Augusta, Georgia, where, after additional life support intervention, he was pronounced dead.

At the time of the event, S-1 was current with his annual physical qualification requirements as specified in 10 CFR 1046. S-1 occupied an SPO-I (defensive combative standard) position, which is the lowest level in terms of physical qualification requirements. It should be emphasized that the event occurred while S-1 was participating in the ongoing physical *fitness* program required by 10 CFR 1046, but was not engaged in an annual physical qualification *test*. S-1 had consistently passed all annual physical qualification tests dating to his service start date in 1988.

On May 22, 2007, S-1 completed his annual physical examination, passed his annual physical qualification test, and was cleared to perform all job functions and duties at the SPO-I defensive combatant standard level. Although S-1 demonstrated several coronary risk factors, the results of a stress electrocardiogram (EKG) and stress echocardiogram in May, 2006 provided no indication of coronary artery disease.

Conclusions

The overall conclusion of the LSI team is that all SRS elements, including DOE's Savannah River Operations Office, the Washington Savannah River Company, WSI, and the protective force union have worked together effectively to implement physical fitness and emergency response programs that are consistent with Federal regulations and DOE policy requirements and that the site's implementation of these requirements did not contribute to the outcome of the June 11 fatality. The actual first aid and emergency response to the fatal event was also determined to be appropriate.

At the same time, the team also concluded that there are a number of site-specific and programmatic implications arising from the fatality that suggest ways in which the overall Departmental fitness and emergency response programs can be improved. These include both detailed suggestions regarding equipment and/or procedures,

such as the provision of Automatic External Defibrillators (AEDs) at exercise locations, to more general consideration of how the Department's fitness and wellness programs are implemented, not just for protective force personnel, but for the family of DOE and contractor employees as a whole.

The resulting four recommendations embrace (1) the provision of AEDs and emergency notification capabilities at exercise locations; (2) achieving greater clarity with respect to requirements governing the implementation of fitness programs, medical disqualifications, and provision of protective force career progressions that are sensitive to the needs of the entire protective force population; (3) application of lessons learned regarding the impact of fatal events on involved personnel; and (4) the apparent high incidence of heart-related fatalities in the DOE protective force population. The foundation for these recommendations is detailed in the following report.

1. INTRODUCTION

1.1. Background and Scope

On Monday, June 11, 2007, at approximately 3:35 p.m., a member of the protective force at the Department of Energy's (DOE) Savannah River Site (SRS), an employee of Wackenhut Services, Incorporated – Savannah River Site (WSI) collapsed and subsequently died after completing an on-shift physical fitness activity. The event was reported to the Occurrence Reporting and Processing System (ORPS) on the same date at 6:50 p.m. [Occurrence Report Number: EM-SR--WSIS-SECFOR-2007-0001]. Although the circumstances were determined not to warrant appointment of a Type A Accident Investigation Board, the potential significance of the event with regard to the design and implementation of the Department's protective force physical fitness programs led the Chief, Office of Health, Safety and Security (HSS) to initiate a Limited Scope Investigation (LSI) as defined by DOE Order 225.1A, *Accident Investigations*. The LSI was directed on June 15, and the team began its investigation at SRS on June 18, 2007.

The LSI team was tasked to examine the circumstances of the June 11 fatality as a means of generating insights into the design and implementation of Departmental programs. It specifically focused upon four areas of potentially general interest to the Department:

- Effectiveness of emergency response and first aid capabilities;
- Implementation of protective force physical fitness and medical requirements (as described in Title 10 Code of Federal Regulations (CFR) 1046, *Physical Protection of Security Interests*;
- Application of lessons learned from similar types of occurrences within the Department, as well as other military and police force-related incidents that may be identified; and
- Implementation of program and management systems interfaces within and between protective force and worker safety programs.

The goal of the investigation, as directed by the Chief, HSS, was to identify lessons learned and potential opportunities for improvement, as demonstrated by the specific circumstances of the event, with results expressed in the form of a series of recommendations applicable to the foregoing four areas of inquiry. These recommendations are presented at the end of the appropriate report sections, and summarized at the conclusion of the report.

1.2. Event Description and Context

The mission of the protective force at SRS is to protect Special Nuclear Material (SNM) and to protect people and the environment. Given the size and complexity of SRS, this mission encompasses many distinct but related activities, ranging from emergency tactical response to terrorist attacks to the exercise of law enforcement functions over a 310-square-mile tract of government property with a site population in the thousands and assets in the hundreds of millions of dollars.

In performing this mission, the protective force employs Security Police Officers (SPOs) at each of the three levels envisioned in DOE policy, from SPO IIIs with high-end tactical response duties, through offensively-qualified SPO IIs, to defensively-qualified SPO Is. 10 CFR 1046 specifies a series of skill and physical performance qualifications (with associated annual testing) for each of the (offensive and defensive) combatant levels. In addition, 10 CFR 1046 mandates the implementation of appropriate year-round training and physical fitness programs to enable SPOs to meet these qualification standards. The SPO who was the focus of this investigation (hereafter S-1) was assigned at the SPO-I defensive combatant level and had successfully passed his annual physical qualification test only a few weeks prior to the fatal event. His death occurred shortly after participation in a routine fitness activity, conducted as part of the ongoing physical fitness program.

Specifically, on the afternoon of June 11, 2007, S-1 was engaged in an unsupervised on-shift physical fitness activity (treadmill interval training) in the fitness facility provided at the SRS 100-K Area. S-1 had reported for duty at

approximately 6:00 a.m., attended muster and equipment issue, and assumed his first post assignment at 7:00 a.m. During the course of the day he rotated through a variety of post and patrol positions before turning in his weapons and equipment and changing clothes for the first of his twice-weekly periods of on-shift physical exercise. He entered the exercise facility (a converted office space provided with treadmills and other exercise equipment) at approximately 3:20 p.m. and began an interval training routine on one of the treadmill machines. A second SPO (S-2) was using the facility at the same time. S-2 noted that, while S-1 appeared to be having some difficulty with managing the interval settings of the treadmill, he demonstrated no apparent signs of physical distress during the course of his exercise cycle.

Upon completion of the cycle, including a cool-down phase on the machine, S-1 left the exercise room, took a bottle of water, and went to the nearby muster room to complete his post-exercise cool-down before returning to work. S-1 sat down in the muster room and conversed with three other SPOs (S-3, S-4, and S-5). None of those officers noted any signs of distress during the initial portion of this conversation.

About three minutes into the conversation, S-1's head suddenly went back, and he dropped his bottle of water. S-3 immediately asked if he was "okay." S-1 managed to respond with a "yes," but then lost consciousness. The other SPOs placed him on the floor, and two of them initiated cardiopulmonary resuscitation (CPR) while the third rushed to notify emergency medical response. An SRS firefighter in the vicinity heard the radio alert and hurried to the scene. Exercising his more advanced emergency medical training, he assisted the SPOs with CPR until the emergency medical team took control of the scene at 3:44 p.m. The responding paramedics initiated advanced life support measures, including the use of a cardiac monitor and defibrillator and the administration of a series of resuscitation medications in accordance with American Heart Association protocols. Life support/resuscitation activity continued as S-1 was transported by ambulance to the emergency room at University Hospital in Augusta, Georgia, where, after

additional life support intervention, he was pronounced dead at 4:38 p.m.

At the time of his death, S-1 was 48 years old. S-1 had consistently passed all annual physical qualification tests dating to his service start date in 1988. On May 22, 2007, S-1 completed his annual physical exam, passed his annual physical qualification test, and was cleared to perform all job functions and duties, including routine fitness activities. Although S-1 demonstrated several potential coronary risk factors (including hypertension, high cholesterol, overweight, and a family history of heart disease), these were being treated (albeit at varying levels of effectiveness). The results of a stress electrocardiogram (EKG) and a stress echocardiogram in May, 2006 provided no indication of coronary artery disease.

S-1 was current with his annual physical qualification requirements as specified in 10 CFR 1046 for incumbents of an SPO-I (defensive combatant standard) position. It should be emphasized that the event occurred while S-1 was participating in the ongoing physical fitness maintenance program required by 10 CFR 1046, but was not engaged in an annual physical qualification test.

2. FACTS AND ANALYSES

2.1 Effectiveness of Emergency Response and First Aid Capabilities

The LSI team closely examined the first aid and emergency response actions taken in response to S-1's medical emergency. It conducted interviews with the responders and other involved witnesses and staff, reviewed the incident audio recording of the 911 call, inspected the 100-K Area fitness facility, reviewed the findings of the independent technical expert called in to examine the treadmill upon which S-1 had been exercising, and reviewed the procedures, guidelines, and training provided for emergency medical response at SRS. The team's overall conclusion was that the procedures and guidelines in place fully conform to expected emergency response requirements, and that the responding emergency medical team was properly trained and prepared for its mission.

The team's technical experts (a physician with significant emergency medical experience and a veteran emergency medical technician (EMT)) closely scrutinized each step in the response. Their conclusion was that all responders "did their job and did it well." Included in this judgment were the SPOs who were at the scene when S-1 first showed signs of distress (and who initiated CPR and the emergency notification), through the firefighter who, on his own initiative rushed to the scene and took over CPR, to the emergency medical teams who undertook advanced life support measures and transported S-1 to the emergency room. In the particular circumstances surrounding S-1's heart attack, everything was done that reasonably could have been done.

In addition, the team's medical experts reviewed the training provided to SPOs such as S-1 regarding participation in physical exercise activities to determine whether this, too, had been appropriate. The team determined that this information had been made available via training programs and awareness activities, as well as in the detailed physical fitness guide distributed to SPOs. In S-1's case, his actions during the course of his exercise routine demonstrated his understanding of the necessary phases of exercise, including both warm-up and cool-down.

Reviewing the circumstances of S-1's heart attack drew the team's attention to two areas in which existing SRS and Departmental emergency response preparation could be improved. The first of these pertains to the provision of Automated External Defibrillators (AEDs) at exercise facilities. While there was no indication in S-1's case that an earlier initiation of defibrillation would have changed the outcome of the event, timely initiation of defibrillation is widely accepted as desirable and, in many instances, has contributed to the successful resuscitation of heart attack victims. At one time, the availability of this potentially life saving tool was limited by the fact that a very high level of expertise was required to use it correctly. However, the latest generation of AED has been designed for use by those with only relatively limited training — the kind of training that can be reasonably provided to non-medical professionals in much the same manner as CPR training. Consequently, it has become practical to place AEDs in a variety of

settings and their distribution has become increasingly widespread in both the public and private sectors (for example, AEDs have been placed at a number of locations within the DOE Headquarters complex).

If it is desirable to place AEDs in office locations involving largely sedentary activities, it would seem even more desirable to place them in locations where activities involving predictable episodes of high cardiovascular stress routinely occur, even when such episodes are periodic and transitory. Such stress is associated with exercise programs designed to build cardiovascular fitness, which makes the provision of AEDs (and associated training for facility users) a logically desirable feature of a properly equipped exercise facility.¹ In S-1's case, CPR was started almost immediately and defibrillation within a relatively short time, but it is not hard to picture parallel circumstances in which the response might not be as rapid and in which an on-scene AED might prove critical.

At SRS, WSI has made a consistent practice of having defibrillation equipment present during the administration of protective force physical qualification tests, a fact noted by an SPO just a month prior to S-1's death when he made, through the WSI suggestion program, a suggestion that similar equipment be made available at the various exercise locations. In the immediate aftermath of the fatality, the SRS Site Occupational Medical Director (SOMD) submitted a draft study calling for the expansion of AED availability to cover these and other similar locations. SRS management indicated to the LSI team that this would become a "fast-track" priority. What makes sense for SRS also makes sense for the Department as a whole.

¹ The American Heart Association and the American College of Sports Medicine encourage the placement and use of AEDs at all health/fitness facilities to minimize the time between recognition of cardiac arrest and successful defibrillation. See *Automated External Defibrillators in Health/Fitness Facilities: Supplement to the AHA/ACSM Recommendations for Cardiovascular Screening, Staffing, and Emergency Policies at Health/Fitness Facilities*, American Heart Association, 2002. (<http://circ.ahajournals.org/cgi/content/full/105/9/1147>)

While ready availability of AEDs is highly desirable, the single most critical element in successful response to a cardiovascular event such as heart attack or stroke is timely initiation of professional emergency medical treatment, which makes immediate notification of emergency medical services the most important aspect of first response. In S-1's case, emergency response notification came within seconds of onset, thanks to the quick thinking and prompt action of his fellow SPOs at the scene. But a review of the overall practices associated with the on-shift individual exercise program indicates that S-1's heart attack could have just as easily occurred when he was alone and with no readily available method to communicate his distress. There was no guarantee that another SPO would have been present with him in the exercise facility, no guarantee that another SPO would have been in the muster room when he went there to cool down, and no guarantee that, even if there had been others in these locations, S-1 would not have chosen some other location in which to rest and drink his water. His protective force radio had been turned in with his equipment when he changed into his exercise clothing, and there was no other readily accessible communication device, such as a distress button, in the exercise facility.

A medical emergency can occur to anyone, in a variety of work and personal settings, when they are alone and without method to summon aid. But, to the extent that these circumstances can be reasonably prevented, they should be prevented. A variety of different methods may be considered to address situations such as this where periods of high cardiovascular exertion make elevated risk predictable. Shift rotations could be adjusted to provide for a "buddy system" during use of exercise facilities, SPOs could be required to keep their radio at hand, a "check in, check out" procedure could be employed (with follow-up response whenever an individual fails to check in at prescribed intervals), or video surveillance of exercise facilities might be monitored in alarm stations. Even something similar to the radio frequency wrist band panic alarms now marketed to the elderly might suffice. None of these represents a perfect guarantee, and all would present some disadvantages, but SRS has now recognized that more could be done. Once again,

what is true at SRS should be true for the Department as a whole. While the Department cannot assume responsibility for every location in which an employee chooses to exercise, it should at least expect reasonable practices to be implemented in those locations provided to meet its requirements.

Recommendation 1

The Department should develop and implement a policy to improve emergency response capabilities where physical exercise programs are conducted at Department-controlled facilities. This policy should address, at a minimum:

- Making AEDs available at Departmentally-controlled exercise facilities with appropriate training to assist on-scene responders in their use and their integration into CPR.
- Procedures to facilitate immediate notification of emergency medical services in the event of a health or safety emergency at such facilities.

2.2 Implementation of Physical Fitness and Medical Requirements

The LSI team concluded that WSI's implementation of protective force physical fitness and medical programs is consistent with both Federal regulations and associated DOE policy requirements and that the requirements as implemented did not contribute to the S-1 fatality. At the same time, the detailed inquiry into this event revealed several opportunities for improvement both at the site and Departmental levels. In particular, while fitness and medical requirements are addressed in a variety of Federal regulations (e.g., 10 CFR 1046 and 10 CFR 851) and in various components of DOE policy, misunderstandings persist with respect to implementation of integrated "fitness/wellness" programs, potential medical disqualifications for protective force service, administration of medical confidentiality requirements, and the relationship between protective force physical standards and career progression opportunities for SPOs. Because these issues are intertwined, and because the common thread is a need for greater understanding, the team concluded that they need to be addressed comprehensively rather than

individually, by empanelling a working group to analyze and develop implementation approaches that address these issues. To understand the basis for this conclusion and the recommendation that follows, it is first necessary to consider in detail just exactly how the relevant requirements work.

The basic physical fitness and medical requirements for DOE protective force programs are established in Title 10 CFR 1046, *Physical Protection of Security Interests*, and in DOE Manual 470.4-3, Change 1, *Protective Force*. The intent of these requirements is to ensure that protective force personnel are physically capable of performing all routine and emergency duties, particularly those tactical duties associated with defeating an armed terrorist attack. To that end, the requirement includes both specific physical performance standards and a more general requirement for a physical fitness program, the latter intended to ensure that each protective force member maintains the appropriate fitness level on a year-round basis.

10 CFR 1046 envisions two categories of protective force physical capabilities, *offensive* and *defensive* combatant. The underlying tactical concept is that the defense of a DOE nuclear facility can be accomplished with a mix of positional forces (intended to man fixed fighting positions and dominate pre-identified potential adversary pathways by fire) and maneuver forces (designed to respond flexibly to the full range of potential adversary actions). Although protection strategies at DOE facilities have evolved considerably since the promulgation of 10 CFR 1046 in 1984, this fundamental tactical concept has remained largely unchanged. For example, even the implementation of the Tactical Response Force policy in the most recent DOE protective force order, which represented a response to the then Secretary of Energy's call in 2004 for an "elite" force, did not alter this concept. This latest evolution of policy explicitly recognized significant roles for both positional (defensive) and maneuver (offensive) elements in the overall makeup of protective forces. The 10 CFR 1046 physical performance standards for defensive combatants (SPO I level) and offensive combatants (SPO II and SPO III levels), remain unchanged. For defensive combatants, the requirement is completion of a ½-mile run in

4 minutes and 40 seconds or less and a 40-yard dash (from a prone position) in 8.5 seconds or less; the corresponding standard for offensive combatants is a 1-mile run in 8 minutes and 30 seconds and a 40-yard dash (from a prone position) in 8 seconds. These physical performance requirements correlated highly with successful task performance in a suite of offensive and defensive scenarios in a study conducted to determine the appropriate standards to be included in 10 CFR 1046.² It is important to note that these standards do not constitute and were not intended to constitute a complete physical fitness program, but only to indicate a minimum performance level necessary for tactical task completion.

In and of themselves, these are not particularly difficult requirements. For example, the U.S. Army's running standard for male personnel aged 47–51 is a 2-mile run in 19 minutes and 30 seconds. The Army standards are applied on a sliding scale that is age and gender specific and encompass other measured activities (push-ups and sit-ups), but the basic point is clear — the Army physical performance metrics for personnel of similar age to the average DOE protective force member at SRS (45) are broadly comparable to the DOE standards (and generally more demanding).

The 10 CFR 1046 performance standards have been stable over a period of 25 years. They are relatively clear, broadly comparable to military standards, and based upon a scientific (if dated) analysis of the physical demands of tactical response. They are simple to apply and allow no room for subjective interpretation.

It would be possible to develop new standards more in touch with contemporary concepts. However, there is no indication that the application of the existing standards contributed to S-1's death. Current and anticipated protective force manning at SRS foresees a relatively high number of SPO-I defensive combatant positions, which was the level at which S-1 had functioned since becoming a protective force member in 1988 (when he qualified at the OCS standard until

² Telfair, W.D, Atterbom, Hemming, and Blackwell, Peggy, *Physical Security: The Human Element*, U.S. DOE, Office of Safeguards and Security, 1982.

1990) and for which he had recently completed the latest in an unbroken series of successful annual re-qualifications.

It appears equally clear that the physical fitness program could contribute much more effectively to the overall physical well-being of protective force members such as S-1, even though the WSI program meets all 10 CFR 1046 and related policy requirements and is implemented in a manner that compares favorably with similar programs throughout the DOE complex.

The fitness requirement is defined in 10 CFR 1046.12(d), which states that:

After his or her initial qualification, each incumbent security police officer shall participate in a DOE-approved physical fitness training program on a continuing basis. This training is for the purpose of ensuring that security police officers maintain the requisite physical fitness for effective job performance and to enable individual security police officers to pass the applicable annual physical fitness re-qualification test without suffering any undue physical injury.

Further definition is provided in DOE Manual 470.4-3, Change 1,A,IV.2.b, which reads:

Contractors responsible for protective force personnel must establish a formal qualification program to meet qualification requirements which ensures that protective force members are competent to perform the tasks within their assigned responsibilities. The qualification requirements will be supported by a formal training program that develops and maintains the knowledge, skills, and abilities required to perform the assigned tasks.

While the intent of these requirements is sufficiently clear, they allow considerable room for interpretation, particularly as they apply to specific features of an effective physical fitness program. In particular, although a corresponding emphasis on the related concept of “wellness” may be inferred from the requirements, it is not made explicit. The actual performance standards

established in 10 CFR 1046 are intended to ensure adequate tactical performance during emergency duties, and do not specify the physical fitness program that may be needed to ensure that these standards are met. The CFR dates from a time in which the larger combination of general health, exercise, and nutrition elements associated with “fitness/wellness” had not yet achieved the widespread recognition that it enjoys today, and any specific provisions for a physical fitness program that it might have included would be obsolete today.

The WSI physical fitness program, developed in cooperation with the protective force union, includes such features as a twice-weekly, on-shift, 45 minute unsupervised exercise session (S-1 was stricken just after participating in such a session), guidance in developing fitness routines, a comprehensive fitness manual provided to each SPO, and available counseling in such wellness disciplines as nutrition and stress management. Cardiovascular stress testing is mandatory every two years for personnel age 45 and older (S-1 had taken such a test in May, 2006). Stress testing is also mandatory for personnel with identified risk factors and is available on a voluntary basis to all personnel upon request, although such requests are uncommon. Existing training plans for SPOs include a variety of health and wellness topics, including: coronary artery disease risk factors, nutrition, flexibility training, resistance/strength training, and cardiovascular fitness training. The fitness program was developed and is administered by certified physical fitness professionals under the overall supervision of the SRS SOMD, whose office is part of the Washington Savannah River Company (WSRC) organization.

In short, WSI offers a well-developed fitness and wellness program that is consistent with the CFR and other DOE requirements and which contributes to the overall goal of ensuring that each SPO continually maintains the ability to meet the established fitness standards. However, closer examination reveals that this program is, in effect, two distinct programs. The first is built around the twice-weekly on-shift workout sessions and is marked by very high levels of participation. The second, that invites each SPO to use, on an individual basis, additional “wellness” program aspects such as nutritional counseling, receives,

by most recent estimate, participation at only the 5 percent level. In other words, that part of the organization's fitness/wellness program that is most closely aligned with the Department's traditional physical "fitness" emphasis (and which is done at work and is, in effect, mandatory) makes an effective contribution. Those aspects of the program that conform more to contemporary concepts of a multi-disciplinary "wellness" program (and which are functionally voluntary) are used much less.

This difference in participation is not notably different from that in other DOE protective force programs or from the U.S. population as a whole. The dilemma is the same as that in many other corporate-sponsored fitness/ wellness programs; namely, the need to draw careful lines between fitness levels that are job-essential (and therefore reasonably supportable as an actual requirement for employment) and those that could be readily viewed as intruding upon an individual employee's right to make personal health decisions without employer interference.

To the credit of WSI and the SRS protective force union, efforts have been made to incentivize more broadly based participation. In addition to a variety of informal recognition measures associated with greater fitness performance, the recently-negotiated SRS protective force contract incorporates a significant hourly wage incentive for those SPOs who opt to pursue employment at the more physically demanding SPO II level. Both protective force management and union representatives have also expressed interest in fitness/wellness program approaches that are based more upon military fitness standards. The union representative agrees in principal with protective force management that fitness standards similar to those of the military are needed, but expressed an interest in a fitness/ wellness program more in line with those of federal law enforcement agencies.³ However, the desirability of achieving much broader levels of overall participation in a comprehensive range of

both "fitness" and "wellness" activities, including high levels of participation from SPO-I level personnel such as S-1, are clearly consistent both with the overall Departmental desire to promote a healthier workforce (as expressed, repeatedly, by successive Secretaries of Energy) and with the expectations regarding promotion of tactical fitness for duty that are implicit in 10 CFR 1046. While maintaining due regard for the pivotal role played by individual choice in such matters, it is entirely reasonable for the Department to develop and promulgate more comprehensive guidance concerning the implementation of properly incentivized programs to actively promote the strength, agility, cardiovascular soundness, and general health of its protective force population.

The LSI team's inquiry into S-1's death also highlighted other potential misunderstandings between existing 10 CFR 1046 requirements and the goal of conducting a properly administered medical and fitness program. The first of these had to do with the potential disconnect between the disqualifying medical conditions specified in 10 CFR 1046 and the anti-discrimination provisions of the Americans with Disabilities Act (ADA). For example, 10 CFR 1046 mandates the disqualification of protective force personnel with heart disease and cancer. The ADA prohibits employment discrimination on account of health conditions so long as the employee can perform the job. There is a need to determine whether the advance of the medical arts since the publication of 10 CFR 1046 with respect to heart ailments and cancer treatment would justify a change in the unconditional disqualification of protective force personnel on that basis. For example, today some individuals can fully and capably perform physically demanding jobs — including those whose demands are comparable to those of a protective force member — even after significant heart surgery or extended cancer treatment. Moreover, the entire thrust of contemporary employment practice supports such an approach. Even the U.S. Army, with its justifiably high expectations for physical performance, has recently allowed the return to duty of personnel who have lost legs or suffered other major "disabilities," so long as they can perform essential job-related tasks. In doing so, they have preserved the significant investment

³ It should also be acknowledged that both protective force managers and union representatives at SRS also support a revision of 10 CFR 1046 physical fitness *test standards* along similar lines, specifically referencing the U.S. Army model.

already made in the soldiers' skills and knowledge.

At present, SOMD's are placed squarely in the middle of the conflict between 10 CFR 1046 and ADA requirements and between the reasonable expectations of an individual employee who has been judged "fit for duty" and a blanket set of outdated restrictions. At SRS, the increasingly common solution has been to grant waivers from the 10 CFR 1046 exclusions, which is acceptable under DOE policy but which is also indicative of a problem. Requirements that can only continue to be implemented by frequent recourse to waivers are clearly requirements in need of reconsideration.⁴

SOMDs and other members of the DOE occupational medicine community are already addressing this anomaly in discussions at Energy Facility Contractor Group (EFCoG) meetings and in other forums. These practitioners and the protective force community they serve are currently placed in a difficult position. For example, in the case of S-1, while several potential risk factors for heart disease were evident, no diagnosis of heart disease had been made and his most recent cardiovascular stress tests had been negative for heart disease. Yet there are current members of the SRS protective force who have been successfully treated for serious heart ailments and returned to duty under waiver. With good reason, SOMDs and protective force managers are uncomfortable relying on waivers; while ADA requirements would tend to encourage such use of waivers, the requirements of 10 CFR 1046 suggests otherwise. This creates a situation in which the SOMD and the waiver-approving DOE official are exposed to *post facto*

⁴ An additional challenge for SOMDs in making these decisions is the fact that, while the performance of routine SPO functions is something that can be readily observed on a daily basis—and thus readily informs the physician's decision regarding what constitutes "fitness for duty" requirements, the ultimate test of such fitness, which is performance of emergency duties, is not so readily evident. As a result of discussions during the course of this inspection, the SRS SOMD indicated that he would in the future make a practice of observing Force-on-Force performance testing as a means of gaining greater insight into the levels of exertion that might fall within a waiver determination of "fitness for duty."

criticism (and liability judgment) in the event that an SPO serving under waiver has a heart attack — which, despite the fact that he or she may be healthier after heart treatment, can never be ruled out. Worse, the current blanket prohibition on serving after certain conditions are diagnosed creates an even more insidious problem by encouraging SPOs who are concerned for their jobs to forgo seeking diagnosis and treatment for potentially disqualifying conditions. While not specifically an issue associated with S-1, this situation deserves more thorough Departmental attention.

The LSI team also identified a potential issue regarding the administration of those portions of an employee's medical information that must be communicated to those who actually administer protective force fitness programs (and who may not be medical professionals). Here again there is a potential conflict between two equally desirable goals. On one hand, the medical community's strict protocols governing the confidentiality of a patient's medical information exist for the very best of reasons. On the other hand, such things as annual physical qualification tests cannot be intelligently and safely administered without some level of disclosure regarding the participant's medical status. The importance of the latter has been highlighted in several previous exercise-related on-duty fatalities in the Department, where questions regarding the adequacy of such communication led to Judgments of Need governing more effective communication.⁵ Making the interaction even more complex is the fact that it must be two-way. In addition to requiring medical professionals to make their testing and/or fitness counterparts aware, in a timely manner, of potential employee health issues that should be considered, 10 CFR 1046 also creates the expectation that supervisors and other non-medical staff will routinely monitor fitness for duty issues that may encompass some potential medical issues properly communicated to the medical staff.

This is an ongoing question for all Departmental protective force organizations, and one that requires continued diligence. At SRS, an additional measure of sensitivity arises from the

⁵ See, for example, the 1995 qualification test fatality at Pantex.

fact that, while overall responsibility for the medical program (including Title 851 compliance) resides with the WSRC occupational medicine organization, responsibility for administration of both physical qualification testing and supporting fitness activities resides with WSI. At present, these interactions are being administered in a manner that is satisfactory to the supervising SOMD, and WSI has strict protocols in place for the control of disclosed information. And, while not specifically identified as a contributing factor to S-1, the interaction at SRS is more complicated than at sites where the information is not required to cross organizational lines, and thus deserves continued special attention.

Finally, in the course of its investigation, the LSI team encountered a level of misunderstanding and apprehension regarding the physical fitness requirements of the Department's Tactical Response Force ("elite force") policy that is in need of resolution. As noted previously, there was no demonstrable relationship between the Department's implementation of the former Secretary's vision of an elite protective force and S-1's death. Less than one month prior to the incident he had re-qualified to defensive combative standard (DCS) requirements. While currently assigned to the only SRS facility requiring transition into the Tactical Response Force concept, S-1 had already identified to WSI that he desired to remain an SPO-I and maintain the same DCS fitness requirement he had maintained since being hired in 1988. Based upon his seniority, his reassignment to another SRS facility was pending only an offensive combative standard-qualified replacement at the 100-K Area. Given S-1's seniority and the proposed configuration of the SRS protective force under the Tactical Response Force concept — a configuration that maintained a significant number of SPO-I positions — there was no basis for concluding that the new concept would place his continued employment in jeopardy. Moreover, the observation of witnesses with whom S-1 reacted during the minutes immediately preceding his heart attack indicated no evidence of particular emotional stress from any source.

However, in the course of examining potential stress factors that could be related to S-1's death, the LSI team encountered significant evidence

that, while S-1 might not have been experiencing stress relating to the implementation of the new tactical concept, a notable level of misunderstanding and apprehension regarding the impact of the new requirements remains, both at SRS (as attested by, among others, the president of the protective force union) and throughout the DOE complex (as evidenced by continuing questions regarding interpretation of the new policy's provisions).

The basis for this continuing issue appears to be twofold: the policy has been misunderstood; and the original language of the 2004 speech by Secretary Abraham that inspired the policy itself became a source of misunderstanding and apprehension. As previously noted, the new policy explicitly embraces the use of both defensive and offensive combatants and encourages a mixed force designed to support the defense of a site using both fixed positions and tactical maneuver elements. This was detailed in the original concept paper that defined "elite force" for the Department, and has been consistently re-emphasized in all subsequent policy formulations. In addition, the Department has gone to considerable lengths to stress the fact that the policy allows for the use of Security Officer, SPO I, II, and III positions to allow for a career progression that protects the employment of all current protective force personnel, not simply those capable of meeting the offensive combatant standard.

However, as sites have gone through the evolution of applying the tactical response force policy to newly-emergent design basis threat considerations, the actual application of the concept has, in many instances, tended to emphasize the offensive combatant elements in the tactical response force mix. In some cases this resulted from a genuine misunderstanding of the intent of the policy, and in others from the dictates of administrative convenience. Even where the ultimate distribution of positions has, as at SRS, allowed for a degree of balance between numbers of defensive and offensive positions, the lengthy development of many of the new tactical response configurations has created extended periods of uncertainty — and therefore stress for protective force members who have quite reasonably viewed a

shortage of defensive positions as a threat to job security.

Compounding the problem was the language in former Secretary Abraham's speech. The intent of the speech, delivered in April 2004 at SRS on the occasions of the Department's annual Security Police Officer Training Competition, was to inspire the security community — and particularly the Department's protective forces — to rise to the challenge of a new policy aspiration to become part of an "elite" force comparable to the military's elite special operations forces. The comparison itself, while inspirational, immediately created misunderstanding. To overcome such misunderstanding, the policy placed great emphasis upon a definition of "elite" as "ensuring that DOE protective forces are as effective in performing *their* mission requirements as the nation's elite military units are in performing their own mission requirements." This represented an explicit rejection of the impulse to simply overlay a military special operations template upon DOE forces. Clearly, as the Department moves to implement protection strategies that incorporate Remotely Operated Weapons Systems, active denial systems, and armored response vehicles that are meant to be used as fighting vehicles rather than simply tactical transportation, an "elite" tactical response force is defined even more thoroughly by the strength of a protective force member's tactical judgment as much as by the strength in his or her arms and legs. In the Department's vision of future tactical response forces there is unquestionably a place for the athletic 25 year-old, but there is also a place for the 45 year-old protective force veteran whose maturity and understanding of site-specific tactical imperatives provides leavening in the response force mix. This calls for approaches that address physical fitness issues as well as the larger issue of career progression.

The Department's security policymakers have endeavored to walk a fine line between imposing this new vision in all its detail and allowing each site to develop its own site-specific interpretation of the Tactical Response Force concept. However, the evidence developed in relationship to the fatality at SRS demonstrates that yet another effort to clarify the intent of this policy may be necessary to alleviate anxiety on the part of

protective force members and to ensure proper implementation of the policy's intent.

In summary, consideration of policy issues in connection with the S-1 fatality indicates that, while the various different requirements concerning fitness and wellness, medical disqualifications, confidentiality and communication, and protective force career progression each serve the Department's overall needs, the implementation of these requirements — particularly at the point where the requirements intersect — calls for further clarifying guidance to alleviate persistent misunderstanding.

Recommendation 2

The Department should establish a working group to examine the nexus of issues associated with implementation of protective force fitness program requirements and to develop clarifying guidance that addresses such issues as:

- Application of "fitness/wellness" concepts within the overall framework of 10 CFR 1046 and 10 CFR 851.
- Reconsideration of 10 CFR 1046-mandated disqualifications for duty in light of current medical advances and the provisions of the Americans with Disabilities Act.
- Reconciliation of the need to communicate medical information to fitness program administrative staff with the need to appropriately preserve confidentiality of medical records.
- Ensuring suitable career progression opportunities for all SPOs while implementing the Tactical Response Force.

2.3 Implementation of Program and Management Systems Interfaces

In addition to its close focus on emergency response and fitness requirement issues, the LSI team also considered the larger management environment in which these programs are implemented at SRS. In particular, the team considered ways in which the S-1 fatality may have highlighted strengths and weaknesses in the implementation of Integrated Safety Management. The overall conclusion was that worker health and safety appears to be fully integrated into protec-

tive force programs in a manner that is consistent with DOE policy.

A review of selected management control documents found that worker safety issues are addressed, and review of training documents likewise found that safety is an integral component of the training program. Review of various audit and surveillance reports found that WSI routinely assesses compliance with safety in protective force operations and incorporates lessons learned from self assessment activities and other feedback sources into improvement of management controls.

The WSI Safety Management System Description, developed in compliance with Department of Energy Acquisition Regulations clause 970.5204-2, *Laws, Regulations, and DOE Directives* and DOE Policy 450.4 *Safety Management System Policy*, describes the system whereby WSI plans, performs, assesses and improves safe work conduct. WSI's management controls system includes a hierarchical system of directives that govern the development and implementation of company policies to meet the provisions and standards contained in DOE Orders and the protective force contract.

WSI Directive 1-01 *Functions and Responsibilities* establishes roles and responsibilities "to ensure that all requirements of the operating contract for security services at the Savannah River Site are adequately addressed and tasked within the organization". Responsibilities for safety and health are assigned throughout the organization with directors and managers charged to use "the mechanisms described in the Safety Management System Description to integrate safety into management and work practices at all levels and for involving employees in the development, implementation and enhancement of the Safety Management System". The overall program includes an extensive system of subordinate procedures in such areas as quality assurance, conduct of operations, and risk evaluation, and incorporates a formalized system of management feedback mechanisms. Health and safety considerations are integrated throughout the protective force training program and specific instruction on health and fitness (including instruction in the risk

factors associated with coronary artery disease) is provided in multiple contexts.

Within the general area of roles and responsibilities, the relationship between the WSRC SOMD and the WSI physical testing and fitness programs occupies a special place in terms of documentation. In accordance with the provisions of Title 851 that govern the establishment of contractor health and safety programs, the relationship between WSI and WSRC is formalized in the *Interface Protocol Document with Memorandums of Understanding and Security and Support Services Agreements as Savannah River Site — Washington Group Savannah River Company and Wackenhut Services Incorporated-Savannah River Site*, dated 2004. Section "G" of that agreement specifies that WSRC provides medical services to WSI during normal and emergency operations. Appendix M, "Memorandum of Understanding (MOU) Regarding Responsibilities for Medical Services," outlines the medical support services available from WSRC and the procedure WSI is to utilize to obtain such services.

Despite the evident strengths of the protective force health and safety management programs at SRS, several issues associated with program implementation arose in connection with the S-1 fatality that draw attention to potential opportunities for improvement, both at SRS and Department-wide. Broadly speaking, these opportunities for improvement fall within the area of the comprehensiveness of hazard analysis as it applies to events of this nature. Two such opportunities have already been highlighted in Recommendations 1 and 2, concerning the provision of AEDs and emergency notification procedures and/or devices at workout locations.

A third opportunity for improvement follows from the circumstances that confronted the SPOs at the scene as they began the process of CPR. A quantity of vomitus had to be cleared from S-1's airway before mouth-to-mouth resuscitation could begin. The presence of such matter, which may contain blood and thus blood-borne pathogens, carries an elevated risk of exposure for the first responders. Post-event screening following such exposure is a routine procedure for emergency medical service providers, but not for those on the scene who may find themselves called upon to

provide first aid/CPR. In the case of S-1, his fellow SPOs took on this risk as they attempted to save his life. It is entirely reasonable that, in similar future circumstances, other SPOs should be assured in advance that the necessary screening will be made immediately available.⁶

The circumstances of S-1's heart attack were understandably traumatic for his colleagues who were at the scene. In several instances, this translated into actions symptomatic of traumatic stress. For example, on the way home that evening after being present during the fatal event, one of S-1's colleagues suffered a traffic accident. While supervisors made a genuine effort to come to terms with the situation they faced in the immediate aftermath of the fatal event, they lacked the benefit of developed procedures and guidance for dealing with this aspect of the situation. Furthermore, insistence on special care measures (e.g., providing a ride home and accompaniment during the immediate aftermath of the event) or formal post-traumatic stress counseling pose an additional problem. As police departments discovered many years ago, the culture of "toughness" that marks the law enforcement profession made officers reluctant to accept special assistance or counseling in the aftermath of traumatic events. The solution was to make these things mandatory, which relieved the officer of the onus of appearing "weak." Given the cultural similarities between police organizations and DOE protective forces, this appears to be an essential element in ensuring the effectiveness of such post-event services.

Finally, and most fundamentally, the Department's lessons learned process itself does not appear to fully address the range of hazards associated with either the implementation of fitness programs or of first response to a fatal incident. SRS has already indicated that, as part of its own lessons learned process, it intends to revisit both the content of its hazard analyses and the guidance governing their conduct to ensure that these types of hazards are properly

⁶ Although it would not obviate the need for post-event pathogen screening, the provision of CPR barrier mouthpieces in exercise locations would represent an inexpensive but potentially valuable preventive measure.

recognized and addressed. Once again, however, the lesson has obvious application not just at SRS, but for the Department as a whole.

While general requirements in all these areas are established in various regulations and policy documents (such as the 10 CFR 851 requirement with respect to screening for blood-borne pathogens and the Employee Assistance Program's consideration of trauma counseling), the critical path forward involves a more comprehensive understanding of the impact of events such as the S-1 fatality on all involved personnel and the need to consider specific lessons as part of an interrelated whole.

Recommendation 3

The Department should provide guidance and communicate lessons learned to provide for:

- Immediate post-event exposure screening for first aid responders.
- Immediate post-event emotional assistance for personnel who may have experienced excessive levels of emotional stress.
- Mandatory counseling for personnel exposed to events that could lead to post traumatic stress.
- More detailed lessons learned to educate managers, supervisors, and other involved personnel regarding considerations that may arise in conjunction with high stress, high hazard events.

2.4 Application of Lessons Learned from Similar Events

In addition to the data collection and analysis conducted by the LSI team at SRS, the HSS Office of Corporate Safety Analysis conducted a review of similar events in the DOE security community during the last twenty years as a means of establishing a larger context for the S-1 fatality. Specifically, the review addressed the occurrence of heart attacks within both the general DOE population and the protective force population (including members of the Office of Secure Transportation's force of Federal Agents who perform analogous duties). The results of that review highlight a pattern of elevated risk associated with protective force members' performance of physical testing and/or fitness activities.

DOE operational data sources for the past 20 years (ORPS, Computerized Accident/Incident Reporting System, and Accident Investigation Reports) identified 19 unique cases (ten of whom were security personnel) where employees suffered heart attacks while performing on-the-job work responsibilities. Eight of the 19 (or 42 percent) heart attack victims did not survive.

Although security personnel represent a relatively small proportion of the total DOE population, they experienced half of all heart attacks that occurred while performing required DOE work.

For perspective, security personnel contribute only about 6 percent of the total DOE work hours. However, security personnel have suffered 10 of the 19 heart attacks (53 percent) that occurred while performing DOE required work. This is the single largest occupational category for heart attacks within the Department.

Security personnel heart attacks typically occur during or soon after completing physical training (running).

A closer review of the security personnel data set indicates that in 8 of the 10 heart attack cases, the personnel were performing physical training, performing a physical training qualification test, or had just completed physical training when the heart attack occurred. The youngest of these security officers was 38 years old, while the oldest was 58 years old. Interestingly, the 38 year old and the 58 year old were among the three security personnel who did not survive their heart attacks. The third non-survivor was 46 years of age.

While the relatively small size of the subject populations dictates caution in terms of statistical generalization, these results are at least strongly suggestive of a link between physical exertion on the part of Security Police Officers/Federal Agents and an elevated incidence of heart attacks. Although a more detailed expert analysis of this potential correlation and its implications for DOE protective force programs exceeds both the charter and time allotted for this LSI, the results of this preliminary activity warrant further analysis.

Recommendation 4

The Department should establish a working group to study the occurrence of heart attacks associated with protective force physical fitness activities (and other similar Departmentally-supported activities), and to develop recommendations to ameliorate this risk.

Without anticipating the results of the recommended study, the apparently elevated risk of heart attack highlighted above gives additional weight to the earlier recommendation (Recommendation 2) regarding the implementation of fitness and wellness programs.

3. CONCLUSIONS AND RECOMMENDATIONS

The June 11 fatality at SRS was a tragic event for the SRS community — particularly the protective force — and for DOE as a whole. Yet in the midst of this tragedy, some positives stand out. Most notably, the first aid response by the SPOs at the scene, the intervention by the firefighter who assisted the SPOs with CPR, and the highly professional actions by the emergency response team reflect great credit on all involved. The observation of the LSI team's medical and emergency response experts with regard to this performance bears repeated emphasis: "They did their jobs and they did them well."

From the broader perspective of programmatic implementation, the team also noted many positives which support the overall conclusion that all SRS elements, including the DOE Savannah River Operations Office, WSRC, WSI, and the protective force union, have worked together effectively to implement physical fitness and emergency response programs that are consistent with Federal regulations and DOE policy requirements. No deficiencies were identified that could be viewed as contributing directly to the fatality.

At the same time, the team also concluded that there are a number of site-specific and programmatic implications arising from the fatality that suggest ways in which the overall Departmental fitness and emergency response programs can be improved. These ranged from detailed sugges-

tions regarding equipment and/or procedures to enable more effective notification and first response to a broad based reconsideration of the effectiveness of the Department's fitness and wellness programs for protective force personnel, particularly the measures that might reasonably be taken to promote cardiovascular health. The team also noted opportunities for the Department and SRS to improve the implementation of particular program elements and to promote better understanding of the Department's expectations with respect to protective force requirements. HSS will assume lead responsibility for initiating and coordinating the response to recommendations that are addressed to the Department as a whole, rather than specifically to SRS.

The specific recommendations are summarized below.

Recommendation 1

The Department should develop and implement a policy to improve emergency response capabilities where physical exercise programs are conducted at Department-controlled facilities. This policy should address, at a minimum:

- Making AEDs available at Departmentally-controlled exercise facilities with appropriate training to assist on-scene responders in their use and their integration into CPR.
- Procedures to facilitate immediate notification of emergency medical services in the event of a health or safety emergency at such facilities.

Recommendation 2

The Department should establish a working group to examine the nexus of issues associated with implementation of protective force fitness program requirements and to develop clarifying guidance that addresses such issues as:

- Application of "fitness/wellness" concepts within the overall framework of 10 CFR 1046 and 10 CFR 851.
- Reconsideration of 10 CFR 1046-mandated disqualifications for duty in light of current medical advances and the provisions of the Americans with Disabilities Act.
- Reconciliation of the need to communicate medical information to fitness program administrative staff with the need to appropriately preserve confidentiality of medical records.

- Ensuring suitable career progression opportunities for all SPOs while implementing the Tactical Response Force.

Recommendation 3

The Department should provide guidance and communicate lessons learned to provide for:

- Immediate post-event exposure screening for first aid responders.
- Immediate post-event emotional assistance for personnel who may have experienced excessive levels of emotional stress.
- Mandatory counseling for personnel exposed to events that could lead to post traumatic stress.
- More detailed lessons learned to educate managers, supervisors, and other involved personnel regarding considerations that may arise in conjunction with high stress, high hazard events.

Recommendation 4

The Department should establish a working group to study the occurrence of heart attacks associated with protective force physical fitness activities (and other similar Departmentally-supported activities), and to develop recommendations to ameliorate this risk.

Without anticipating the results of the recommended study, the apparently elevated risk of heart attack highlighted above gives additional weight to the earlier recommendation (Recommendation 2) regarding the implementation of fitness and wellness programs.

APPENDICES

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APPENDIX A

Appointing Official's Memorandum of Establishment

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Department of Energy
Washington, DC 20585

June 15, 2007

MEMORANDUM FOR JEFFREY M. ALLISON
SAVANNAH RIVER OPERATIONS OFFICE

FROM: GLENN PODONSKY *[Signature]*
CHIEF HEALTH, SAFETY AND SECURITY OFFICER
OFFICE OF HEALTH, SAFETY AND SECURITY

SUBJECT: Limited Scope Investigation of the June 11, 2007
Security Police Officer Fatality at the Savannah River
Site

I hereby establish a Limited Scope Investigation for evaluating the June 11, 2007, Security Police Officer fatality at the Savannah River Site (SRS) and the implementation of the Department's Policies and practices related to fitness-for-duty requirements. This review will also utilize results of other similar incidents and investigations to gauge the effectiveness of existing programs. Based on the deliberations between your staff and mine, we have determined that this incident, while not an accident, warrants a Limited Scope Investigation (LSI) as defined within DOE Order 225.1A, Accident Investigations. There is considerable programmatic benefit in conducting this limited scope investigation using the investigative model described in this Order.

The investigation will be managed by the Office of Corporate Safety Programs, within the Office of Health, Safety and Security. I appoint Dr. James McGee of my staff to serve as the Team Leader. Dr. McGee will be supported by a Team comprised of four subject matter experts in security and protective force programs; safety and occupational medicine; emergency response; and management systems. An invitation will be extended to the local protective force union (United Professional Protective Force of Savannah River, Local 125) to observe the investigative process and offer feedback to the Team Leader. In addition, Mr. Dennis Vernon will serve as the overall Team Coordinator for process, schedule, and logistics.

The Savannah River Operations Office (SR) is requested to provide an investigation point-of-contact to coordinate needed logistical and administrative assistance. It is anticipated that the Office of Environmental Management will designate a representative to observe aspects of this investigation and, as appropriate, provide feedback and assistance to the Team during their data collection activities.



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This Limited Scope Investigation will include a review of the following:

- implementation of protective force physical fitness and medical requirements (as described in Title 10 CFR 1046, "*Physical Protection of Security Interests*");
- effectiveness of emergency response and first aid capabilities;
- application of lessons learned from similar type of occurrences within the Department, as well as other military and police force related incidents that maybe identified; and
- implementation of program and management systems interfaces within and between protective force and worker safety programs.

The Office of Corporate Safety Programs will provide the Office of Environmental Management and my office with progress reports during this investigation. Discussions of the investigation and copies of the draft work products and report will be strictly controlled. The draft report will be provided to James A. Rispoli, Assistant Secretary for Environmental Management for comment prior to release of the final report. The final report is expected by July 20, 2007.

cc: Dennis Spurgeon, US
James A. Rispoli, EM-1
Ines Triay, EM-3
Dr. James McGee, HS-80
Charles B. Lewis, HS-30

APPENDIX B

**Members of Management, Quality Review Board,
Limited Scope Investigation Team Members, and Support Staff**

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Management

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Michael Kilpatrick – QRB Chairman
Dean Hickman
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APPENDIX C

ORPS Report of Accident

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EM-SR--WSIS-SECFOR-2007-0001

NOTIFICATION

Occurrence Report After 2003 Redesign

Security Force Facilities

(Name of Facility)	
Balance-of-Plant - Safeguards/security	
(Facility Function)	
Savannah River Site	Wackenhut Services, Inc. - S.R.
(Site)	(Contractor)
Name: SELMAN, CHARLES A	
Title: Manager, Quality & Performance Analysis Department	Telephone No.: (803) 952-7789
(Facility Manager/Designee)	
Name: SELMAN, CHARLES A	
Title:	Telephone No.: (803) 952-7789
(Originator/Transmitter)	
Name: Charles Selman	Date: 06/11/2007
(Authorized Classifier (AC))	

1. Occurrence Report Number: EM-SR--WSIS-SECFOR-2007-0001

SRS Security Police Officer Fatality

2. Report Type and Date: NOTIFICATION

	Date	Time
Notification:	06/11/2007	18:50 (ETZ)
Initial Update:		(ETZ)
Latest Update:		(ETZ)
Final:		(ETZ)

3. Significance Category: 2

4. Division or Project: Wackenhut Services, Inc.

5. Secretarial Office: EM - Environmental Management

6. System, Bldg., or Equipment: Building #704-K

7. UCNI?: No

8. Plant Area: 100-K Area

9. Date and Time Discovered: 06/11/2007 15:30 (ETZ)

10. Date and Time Categorized: 06/11/2007 17:00 (ETZ)

11. DOE HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. Other Notifications:

Date	Time	Person Notified	Organization
06/11/2007	15:50 (ETZ)	Marcia Delmore	DOE-SR
06/11/2007	15:50 (ETZ)	Ron Bartholomew	DOE-SR
06/11/2007	15:50 (ETZ)	Terry Moreau	WSI-SRS
06/11/2007	15:50 (ETZ)	W.D. Phillips	WSI-SRS

13. Subject or Title of Occurrence:

SRS Security Police Officer Fatality

14. Reporting Criteria:

10(2) - An event, condition, or series of events that does not meet any of the other reporting criteria, but is determined by the Facility Manager or line management to be of safety significance or of concern to other facilities or activities in the DOE complex. One of the four significance categories should be assigned to the occurrence, based on an evaluation of the potential risks and the corrective actions taken. (1 of 4 criteria - This is a SC 2 occurrence)

15. Description of Occurrence:

While on duty, a Security Police Officer had just completed conducting a physical training session (running on the treadmill) when he collapsed and never regained conscious.

16. Is Subcontractor Involved? No

17. Operating Conditions of Facility at Time of Occurrence:

Indoors - 76 degrees

18. Activity Category:

03 - Normal Operations (other than Activities specifically listed in this Category)

19. Immediate Actions Taken and Results:

Two Security Police Officers in the same location immediately started conducting CPR while awaiting the arrival of the SRS ambulance. The individual was transported by ambulance to University Hospital in Augusta, Georgia.

20. ISM:

21. Cause Code(s):

22. Description of Cause:

23. Evaluation (by Facility Manager/Designee):

24. Is Further Evaluation Required?: Yes

If YES - Before Further Operation? No

By whom?

By when?

25. Corrective Actions

(* = Date added/revised since final report was approved.)

26. Lessons Learned:

27. Similar Occurrence Report Numbers:

28. User-defined Field #1:

29. User-defined Field #2:

30. HQ Keyword(s):

31. HQ Summary:

32. DOE Facility Representative Input:

33. DOE Program Manager Input:

APPENDIX D

Redacted Death Certificate

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07/05/2007 08:12 FAX

002/003

CERTIFICATE OF DEATH/ STATE OF GEORGIA		Birth Number	Local File Number	State File Number
1a. DECEASED NAME (First, Middle, Last)		1b. IF DECEASED IS FEMALE, ENTER MAIDEN LAST NAME	2. Sex	3. DATE OF DEATH (Mo., Day, Year)
1c. RACE (White, Black, Asian, Indian, etc.)		4. ORIGIN OF DECEASED (Italian, Mex., French, English, etc.)	5. DATE OF BIRTH (Mo., Day, Year)	6. AGE-Last Birthday (Years)
7a. 48		7b. UNDER 1 YEAR	7c. UNDER 1 DAY	8. COUNTY OF DEATH
9. City, Town or Location of Death		10. HOSPITAL OR OTHER INSTITUTION NAME (If not in other, give street and No.)		11. IF HOSPITAL OR INST. (Indicate DOA, OPERATOR, RN, Incident) (Specify)
12. Augusta		13. University Hospital ER		14. Emergency PM
15. State and County of Birth (If not in USA, name Country)		16. Citizen of What Country?	17. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (Specify)	18. SPOUSE (If married or widowed, give spouse's name - If wife, give maiden name)
19. United States		20. Married	21. Security	22. WAS DECEASED EVER IN U.S. ARMED FORCES (Yes or No)
23. Social Security Number		24. USUAL OCCUPATION (State kind of work done during most of working life, even if retired)	25. KIND OF INDUSTRY OR BUSINESS	26. Yes
27. Security Inspector		28. Security	29. STREET AND NUMBER AND ZIP CODE	30. INSIDE CITY LIMITS? (Yes or No)
31. No		32. FATHER'S NAME First Middle Last	33. MOTHER'S MAIDEN NAME First Middle Last	34. Relationship
35. Informant's Name First Middle Last		36. Mailing Address (Street, R.F.D. No., City or Town, State, Zip)	37. Relationship	38. Wife
39. Burial, Cremation, Removal (Specify)		40. Disposition Date (Mo., Day, Year)	41. Cemetery or Crematory Name	42. Location (City or Town, State, Zip, County)
43. Cremation		44. June 14, 2007	45. Central Savannah River Crematory	46. Augusta, GA 30906 Richmond
47. Funeral Director (Signature)		48. FUN. DIR. LICENSE NO.	49. NAME AND ADDRESS OF FACILITY (Street, R.F.D. No., City or Town, State, Zip)	50. EST. LICENSE NO.
51. Bryan B. Evans		52. 4268	53. Platt's Funeral Home	54. 1357
55. Embalmer (Signature)		56. EMBALMER LICENSE NO.	57. 337 North Belair Road	58. Evans, GA 30809
59. No Embalming		60. 21a. 21b. 21c.	61. 21d. 21e. 21f.	
62. IMMEDIATE CAUSE (Enter only one cause per line for A, B, and C)				
A. Acute Coronary Insufficiency				
B. Severe Coronary Atherosclerosis				
C. Other Significant Conditions - conditions contributing to death but not related to cause given in Part 1A (If female, indicate if pregnant or born observed within 30 days of death)				
D. Calicomegaly				
E. Autopey (Yes or No)				
F. YES WERE FINDINGS CONSIDERED IN DETERMINING CAUSE OF DEATH? (Yes or No)				
G. YES				
H. YES				
I. YES				
J. YES				
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APPENDIX E

Interviews and Documents Reviewed

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Positions/Persons Interviewed

WSI management, K Area	WSI Senior Vice President and General Manager
WSI Assistant General Manager Operations Support	WSI Vice President Wackenhut Government Services
DOE SR Facility Representative for WSI.	DOE SR Program Manager for Medical Qualification, PT program administration and oversight.
DOE SR Safety and Health Staff	WSI OSHD Oversight Staff
WSRC Medical Director	WSRC Emergency Manager
WSRC EMS/Fire Responders	WSI Witnesses and Responders
WSI Health and Safety Staff	WSI Physical Training Program Staff

Documents/Information Reviewed

U.S. Department of Energy, National Training Center, Type B Accident Investigation, *Exertional Heat Illnesses During SPOTC 2006 at the National Training Center Albuquerque, New Mexico*, report dated July 2006

U.S. Department of Energy, Hanford Site, Type A Accident Investigation of the July 15, 2004, *Hanford 200 East Area Fall Fatality*, DOE/RL-2004-63, report dated August 2004

U.S. Department of Energy, Albuquerque Operations Office, *Type A Accident Investigation Board Report on the April 19, 1999 Special Agent Fatality Southeast Courier Section, Oak Ridge, Tennessee*, Final report dated June 1999

U.S. Department of Energy, Pantex Plant, Type A Accident Investigation Report, *Fatality of Security Police Officer Involved in a Physical Fitness Qualification Test on December 16, 1995*, report dated March 1996

U.S. Department of Energy, Nevada Test Site, Report of the Type A Accident Investigation Board January 19, 1990, *Fatality of a Wackenhut Services Inc. (WSI) Employee during a Physical Fitness Standards Test on December 14, 1989*

U.S. Department of Energy Occurrence Reporting and Processing System (ORPS) data searches for the January 1, 1990 through June 27, 2007 timeframe

U.S. Department of Energy Computerized Accident Incident Reporting and Recordkeeping System (CAIRS) data searches for the January 1, 1987 through June 27, 2007 timeframe

WSI SRS Memorandum: Special Investigation of a Fatality in 100-K Area; 06/12/07

WSI SRS Uniform Crime Report 070098LE; 06/11/07

WSI SRS: Incident ECF Chart

WSI SRS: 911 Incident Call Audio Recording; 06/11/07

WSI SRS: Health Screening and Coronary Artery Disease Risk Appraisal Form

WSRC Medical Unit: SPO1 Stress Echo Cardiogram Report; 05/11/2000

WSI SRS Consolidated Training Risk Assessment: Health and Fitness; 0.01.07, 12/08/06

WSI SRS Paramedic Ambulance Report for SPO1: 06/11/07

WSI SRS Training Lesson Plan: Physical Fitness Program; 90.01.06, 11/14/06

WSI SRS OSHD Surveillance Report: 07-00073, Observation of Task Hazards and Controls, Physical Fitness Facility Area 703-1B, Lesson Plan 90.01.07, 04/30/07

WSI SRS OSHD Surveillance Report: 07-00049, Observation of Task Hazards and Controls, B Area Running Track, Lesson Plan 90.01.07, 03/19/07

WSI SRS OSHD Surveillance Report: 07-00048, Observation of Task Hazards and Controls, Observation of Task Hazards and Controls, B Area Running Track, Lesson Plan 90.01.07, 03/15/07

WSI SRS OSHD Surveillance Report: 07-00040, Observation of Task Hazards and Controls, Observation of Task Hazards and Controls, Fitness Facility B Area, Lesson Plan 90.01.07, 03/09/07

WSI SRS OSHD Surveillance Report: 07-00039, Observation of Task Hazards and Controls, Observation of Task Hazards and Controls, Fitness Facility 703-1B Area, Lesson Plan 90.01.07, 03/09/07

WSI SRS OSHD Surveillance Report: 07-00024, Observation of Task Hazards and Controls, Observation of Task Hazards and Controls, Fitness Facility 703-B and 703-1B Area, Lesson Plan 90.01.07, 02/01/07

WSI SRS OSHD Risk Evaluation: 06-00032, Physical Fitness Facilities, ?/?/06

WSRC Draft Position Paper: WSRC Position Statement on AEDs in the Workplace; Dr. Tomarchio Occupational Medicine Director, June 2007

WSI SRS: Integrated Safety Management System Description: 06/15/07

WSI SRS: Fitness Observation Procedure; 1-6511

WSI SRS: Safety Risk Evaluation Procedure; 1-3100

WSI SRS: Deficiency Risk Assessment Procedure; 1-3703

WSI SRS: Management Walk down Procedure; 1-3304

WSI SRS: Standard Procedure; Training Division Facility Information and Orientation; 1-6050, 06/01/05

WSI SRS: Standard Procedure; Temperature Extremes; 1-3122, 02/14/07

WSI SRS: Standard Procedure; Recreational Safety, 1-3150, 12/09/05

WSI SRS: Training Lesson Plan; Coronary Artery Disease Risk Factors; 90.01.01, 11/20/06

WSI SRS: Physical Fitness Training Manual

WSI SRS: Response to the Type A Report for the April 19, 1999 Special Agent Fatality at Oak Ridge

WSI SRS: Law Enforcement Department Statement: Witness Statement – JM; 06/11/07

WSI SRS: Law Enforcement Department Statement: Witness Statement – CM; 06/11/07

WSI SRS: Law Enforcement Department Statement: Witness Statement – AC; 06/11/07

WSI SRS: Law Enforcement Department Statement: Witness Statement – JS; 06/11/07

Atlantic Fitness Service Report: Incident Involved Equipment Inspection 100-K Fitness Center Treadmill; 06/20/07

WSI SRS: Incident Timeline

WSI SRS: Annual Training Plan FY 2007

DOE EM: Safeguards and Security Injury and Illness Rate Assessment for the Savannah River Site Office; 03/05

DOE SR: Letter Bartholomew to WSI SRS Isom; Approval of Variance SO-SR-07-015 (V3803/1) (U); 05/02/2007

WSI SRS: Physical Fitness Emergency Preparedness Drill Report: Running Track; 06/30/97

WSI SRS: Physical Fitness Emergency Preparedness Drill Report: 703-1B Fitness Center, 08/25/00

WSI SRS: Physical Fitness Emergency Preparedness Drill Report: B-Area Walking Trail; 09/25/02

WSI SRS: Physical Fitness Emergency Preparedness Drill Report: 703-1B Fitness Facility; 12/29/04

WSI SRS: Physical Fitness Emergency Preparedness Drill Report: 703-1B Fitness Facility; 09/15/05

WSRC: Fire Department Operating Standard; Emergency Medical Services Operation; 2Q2 12.10, 04/20/06

WSRC/WSI SRS: Interface Protocol Document; 03/05/04

WSRC Manual 6Q SRS Emergency Plan Management Procedures, 12/20/06.

WSRC-CSD-7 SRS Emergency Plan, 07/15/05

WSRC MP 4.12 Emergency Preparedness, 08/20/00

WSI-SRS Written Directive System procedure # 1-02

WSI-SRS Functions and Responsibilities Directive procedure # 1-01

WSI-SRS Quality Assurance Plan (QAP) procedure # 1-03

WSI-SRS Conduct of Operations Manual procedure # 1-04

WSI-SRS General Safety Procedure #1-3100

“Interface Protocol Document with Memorandums of Understanding and Security and Support Services Agreements at Savannah River Site–Westinghouse Savannah River Company and Wackenhut Services Incorporated–Savannah River Site,” dated 2004

WSI-SRS Safety Risk Evaluation procedure # 1-3113

WSI-SRS Fitness for Duty procedure # 1-6025

WSI-SRS Medical/Physical Fitness Qualification Training Program procedure # 1-6508 WSI-SRS Developing and Processing Training Materials procedure # 1-6004

WSI Training Lesson Plan number 90.01.06 Physical Fitness Program

WSI Training Lesson Plan number 90.01.05 Cardiovascular Fitness Training

WSI Training Lesson Plan number 90.01.03 Flexibility

WSI Training Lesson Plan number 90.01.04 Resistance Training

WSI Training Lesson Plan number 90.01.02 Nutrition

WSI Consolidated Training Risk Assessment 90.01.07

WSI-SRS Incident Reporting and Investigation procedure # 1-3144

WSI-SRS Standards/Requirements Program (Phase I Assessments) procedure # 1-330

WSI-SRS Standards/Requirements Program (Phase II Assessments) procedure # 13301 revision

WSI-SRS Employees Leading and Improving Toward Excellence Suggestion Program procedure # 1-3302 rev

WSI-SRS Quality Assurance Audit, Appraisal and Surveillance Program procedure # 3307

WSI-SRS Causal Analysis procedure # 1-3702

White paper—not dated—WSI-SRS Response to the Type A Report of the April 19, 1999 Special Agent Fatality at the Southeast Courier Section Oak Ridge, Tennessee

WSI-SRS Temperature Extremes procedure # 1-3122

WSI-SRS Employee Safety and Health Committee procedure # 1-3110

FY 2005 Integrated Safety Management System (SMS) Declaration – Communication from J. Allison (SRO) to I. Triay (EM)

August 2006 ISMS Annual Integrated Safety Management System Declaration from WSI to SRO

FY 2004 Occupational Safety and Health Report OSHD Report # 04-00027 *One Repetition Maximum (1-RM) Testing of Muscular Strength in the Mandatory Physical Fitness Assessments of Protective Force Supervisors*, 4/27/04

FY 2006 Occupational Safety and Health Report OSHD Report # 05-00131 *Physical Fitness Training*, 12/12/05

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00136 *Physical Fitness Consolidated Training Risk Assessment*, 12/15/06

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00005 *Physical Fitness Training*, dated 1/10/07

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00015 *Physical Fitness Training*, dated 1/22/07

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00041 *BSPOT Physical Fitness Training*, 3/12/07

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00043 *BSPOT Physical Fitness Training*, 3/13/07

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00051 *BSPOT Physical Fitness Training*, 3/29/07

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00071 *BSPOT PT*, 4/30/07

FY 2007 Occupational Safety and Health Report OSHD Report # 07-00048 *BSPOT PT*, 3/15/07

APPENDIX F

Heart-Related Incidents Involving Protective Force and Federal Agent Force Members

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Security and Office of Secure Transportation (OST) Incidents

Date of Incident	Site	Data Source	Description	Fatality?
03/06/2006	OST Central Command	ORPS # NA--OTS-OTS-TSS-2006-0001	The Federal Agent was working out as part of the required physical fitness program. He was running on a treadmill and went into cardiac arrest.	No, AED used, rescue breathing performed, and Lifeflight transported him to the hospital
01/10/2005	OST Fort Chaffee, AR	ORPS # NA--OTS-OTS-TSS-2005-0001	The Wackenhut contractor was working out at the Physical Fitness Facility when he collapsed.	No, a heart attack was suspected and an AED was used. The employee regained consciousness
04/18/1999	OST Oak Ridge, TN	Type A A/I Board Report on the Special Agent Fatality, Report dated June 1999	The Federal Agent had successfully completed his 1-mile qualification run on a treadmill and was exiting the building when he collapsed.	Yes, appropriate on-site emergency medical care was provided including use of AED, and agent was taken to hospital where he was pronounced dead.
01/29/1996	OST Oak Ridge, TN	CAIRS Report, Organization Code 0502009, Case #1996001	The administrative employee, a former Federal Agent, was performing routine duties when he began feeling ill. [In 1991 the employee was in a courier rehabilitation program and developed an irregular heartbeat.]	No, Cardiologist determined he had suffered a heart attack.
12/16/1995	Pantex BWXT Security	Type A A/I Report "Fatality of Security Officer Involved in Physical Fitness Qualification Test," Report dated March 1996	The SPO II collapsed while on the running track attempting his annual fitness qualification test.	Yes, he was transported by medical evacuation helicopter to a hospital in Amarillo where he was admitted and remained comatose for a week. He was transferred to a hospice where he died on 12/23/1995.

Security and OST Incidents (continued)

Date of Incident	Site	Data Source	Description	Fatality?
12/28/1992	Oak Ridge, TN Wackenhut Services	CAIRS Organization Code 4007509, Case #1992311	The Wackenhut contractor was performing required physical fitness and just completed running on a treadmill when he collapsed a short time later.	No, on-site emergency aid was provided by plant EMT's and a nurse while en-route to the hospital.
08/17/1991	Los Alamos, NM Protection Technologies Los Alamos	CAIRS Organization Code 0544809, Case # 1991052	The security inspector relieved another inspector and shortly afterwards felt muscle strain in his chest.	No, an ambulance was called, later diagnosis indicated the security inspector survived a heart attack
01/08/1991	OST Albuquerque, NM	CAIRS Organization Code 0502009, Case # 1991003	The nuclear material courier was running a 220-yard run as part of a sanctioned rehabilitation program when he experienced nausea and heart palpitations.	No, the report does not provide specific response actions taken, but identifies "heart attack" in field 33-a.
12/14/1989	Nevada Test Site, Wackenhut Services Inc.	Report of the Accident Investigation Board January 19, 1990 "Fatality of a Wackenhut Services Inc Employee During a Physical Fitness Standards Test on December 14, 1989"	The Wackenhut security officer just completed the half-mile run as part of his annual physical fitness standards test and was walking to cool down when he collapsed on the track.	Yes, CPR was performed and paramedics administered advanced cardiac life support, however the efforts were unsuccessful.
03/11/1989	OST Albuquerque, NM	CAIRS Organization Code 0502009, Case #1989012	While participating in job-sanctioned physical fitness (running) the nuclear material courier lost consciousness. He ran 10 kilometers, stopped, experienced nausea, headache, and a mild heart attack.	No, the report does not provide specific response actions taken.

DOE (Non-Security/OST) Work-Related Incidents

Date of Incident	Site	Data Source	Description	Fatality?
12/31/2006	Fermilab Apache Point Observatory, NM	ORPS Report SC--FSO-FNAL- FERMILAB-2007-0001	An FNAL employee suffered a heart attack while shoveling snow at the Apache Point Observatory.	No, The employee dialed 911 and emergency personnel responded, and used a defibrillator while transporting to the nearest hospital.
07/15/2004	Hanford 200 East Area	Type A A/I of the July 15, 2004 Hanford 200 East Area Fall Fatality, Report dated August 2004	Although this accident is characterized as a fall fatality, the Board determined that the individual had medical conditions that could have led to the fall from the ladder. [He underwent outpatient surgery 3 days earlier and collapsed twice the next evening.]	Yes, the individual was working alone and there were no witnesses to the accident.
12/03/2001	LLNL, Near Building 235	CAIRS Organization Code 0580403, Case #2001222	The employee was walking and collapsed on the sidewalk.	No, paramedics successfully treated the employee for a heart attack.
06/07/2001	Strategic Petroleum Reserve , Off- Site location, DynMcDermott Petroleum Company Emergency Response Technician (ERT)	ORPS Report FE-HQ--SPR-SPRO- 2001-0002	The ERT had just completed a fire fighting training exercise and was waiting for the next exercise when he collapsed.	Yes, other ERT members initiated CPR, and while in the ambulance, an "air way" was inserted with CPR continuing. He was pronounced dead at the hospital.

DOE (Non-Security/OST) Work-Related Incidents (continued)

Date of Incident	Site	Data Source	Description	Fatality?
01/08/2001	East Tennessee Technology Park, Near Bldg. K-31	ORPS Report EM-ORO--BNFL-K32-2001-0001	A truck driver collapsed striking his head on the trailer's bumper as he fell.	Yes, CPR was initiated and paramedics continued the CPR and used a defibrillator. A LifeStar helicopter transported the truck driver to the hospital, but efforts to resuscitate were unsuccessful.
08/14/1995	Oak Ridge National Laboratory	SC-ORO--MMES-X10EAST-1995-0007	The Plant and Equipment employee attended the morning meeting and was riding in a truck en-route to his assigned work area when he had difficulty breathing.	Yes, the driver stopped the truck and then called 911. CPR was initiated and an ambulance transported the employee to the local hospital where he was pronounced dead.
03/06/1995	Argonne National Laboratory – East	SC-CH-AA-ANLE-ANLEER-1995-0002	An employee working at his desk, on the telephone with another employee when he said he felt ill and dropped the phone. [The other employee called 911.]	Yes, emergency responders revived the employee and transported him to a local hospital. However, he died approximately 2.5 hours after the initial event.
05/15/1991	Idaho National Laboratory	CAIRS Organization Code 3004001, Case #1991013	The firefighter performed a walkdown and was at his desk when he felt chest pains that were getting worse.	No, the employee was transported to the hospital, but no additional information was provided.
04/13/1988	Oak Ridge Office	CAIRS Organization Code 4004501, Case #1988003	The analyst was working at her desk while electricians were working on a nearby electrical panel when an explosion and fire occurred in the electrical panel. She ran from the work area exiting the building. Shortly thereafter she experienced chest pains.	No, she was transported to the local hospital and treated for a suspected heart attack.

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